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LISTING OF CLAIMS

CLAIMS

What is claimed is:

1. (currently amended) A method comprising:

employing at least one system for differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users to perform service differentiation based on content in at least one data packet for connections accepted in said at least one system, including the steps of:

capturing said at least one data packet until a complete application header is detected;

parsing said complete application header to determine at least one application tag;

matching said at least one application tag to at least one matching rule;

determining a presence of at least one match with said at least one matching rule; and

performing service differentiation action based on said at least one matching rule in order to provide a particular level of service from said different levels of service.

2. (original) A method as in claim 1, wherein said at least one application tag includes at least one tag taken from a group of tags including: URI, cookie, request method, HTTP version, a tag in an application protocol, and a tag in a communication protocol.

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3. (currently amended) A method as in claim 1, wherein said at least one application tag is a URI, and wherein the URI is the second string in a HTTP header as defined in the an application protocol.

4. (original) A method as in claim 1, further comprising employing a table having said at least one matching rule.

5. (original) A method as in claim 1, wherein the step of determining includes finding a best match.

6. (original) A method as in claim 1, wherein said step of performing service differentiation action includes at least one action taken from a group of actions including: dropping, rate controlling, scheduling connections, monitoring, request prioritization, and a policing action.

7. (previously presented) A method as in claim 1, wherein said step of performing service differentiation action includes an action of dropping, and wherein said action of dropping includes discarding a connection based on rules that are created to provide better performance to the connections that are accepted.

8. (original) A method as in claim 6, wherein said action includes at least one act taken from a group of acts including: sending a reset message, sending an application return code, determining compliance with a given rate and/or burst, prioritization, weighted round robin, round robin, ordering, recording statistics, performing a cleanup, and protocol control.

9. (previously presented) A method as in claim 1, further comprising installing at least one matching rule to provide a higher level of system performance for higher classed packets and connections.

10. (original) A method as in claim 1, further comprising detecting establishment of a new connection.

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11. (original) A method as in claim 10, wherein said step of detecting includes establishing of a new TCP connection.

12. (original) A method as in claim 11, wherein said step of establishing of a new TCP connection includes: receiving SYN packet; sending SYN-ACK packet; deferring accept; receiving ACK for SYN-ACK packet; and deferring notification of data packet.

13. (original) A method as in claim 1, wherein said step of capturing includes detecting application header delimiters for said at least one data packet.

14. (currently amended) An apparatus comprising a service differentiation module employing at least one system for differentiating at least one service class in a kernel using service differentiation to provide different levels of quality of service for system performance to users for connections accepted in said at least one system, said module including a tangible computing medium enabling functions of:

a parser to parse a client Web request;

a classifier to classify the request based on application headers and assigning a request class within a kernel;

a selector to determine an action rule based on the request class; and

a performer to apply the action rule based on the request class in order to provide better system performance for higher classed packets and connections.

15. (withdrawn) An apparatus comprising a policy agent, said policy agent including:

a communicator to communicate from a user space to a kernel with an application interface;

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an initializer to instantiate service differentiation rules for an application tag within the kernel
which include classification and action rules; and

a manager to delete and update rules on a user request.

16. (withdrawn) A method comprising:

forming a rule, including the steps of:

communicating from a user space to a kernel with an application interface;

instantiating service differentiation rules for an application tag within the kernel which include
classification and action rules; and

deleting and adding rules based upon a user request.

17. (withdrawn) A method as in claim 16, further comprising updating rules based upon a user
request.

18. (original) An article of manufacture comprising a computer usable medium having computer
readable program code means embodied therein for causing service differentiation, the computer
readable program code means in said article of manufacture comprising computer readable
program code means for causing a computer to effect the steps of claim 1.

19. (original) A program storage device readable by machine, tangibly embodying a program of
instructions executable by the machine to perform method steps for service differentiation, said
method steps comprising the steps of claim 1.

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20. (previously presented) A computer program product comprising a tangible computer usable medium having computer readable program code means embodied therein for causing service differentiation, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 14.

21. (withdrawn) A computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing rule installation, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 15.

22. (currently amended) An apparatus comprising a computing medium enabling at least one function of:

means for employing at least one system for differentiating at least one service class in a kernel to perform service differentiation based on content in at least one data packet for connections accepted in said at least one system, comprising:

means for capturing said at least one data packet until a complete application header is detected;

means for parsing said complete application header to determine at least one application tag;

means for matching said at least one application tag to at least one matching rule;

means for determining a presence of at least one match with said at least one matching rule; and

means for performing quality of service differentiation action based on said at least one matching rule.

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23. (previously presented) A computer program product comprising a tangible computer usable medium having computer readable program code means embodied therein for causing differentiation of at least one service class in a kernel, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 22.